

Application Number: 10/599,107

Filed: 09/19/2006

Confirmation No.: 4215

Exhibit A

Affidavit under 37 CFR §1.132

IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE

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| Application Number: | 10/599,107 |
| Filed: | September 19, 2006 |
| Applicants: | George H. Tagawa, Kenneth K. Tagawa, Randall E. Tagawa, and Fred Naylor Blackmore, Jr. |
| Title: | Plant Punch Methods and Apparatus |
| Art Unit: | 3643 |
| Examiner: | Son T. Nguyen |
| Assignee: | Tagawa Greenhouse Enterprises, LLC |
| Attorney Docket: | TGI-Shiftler-USNP |
| Customer No.: | 33549 |
| Confirmation No.: | 4215 |

AFFIDAVIT UNDER 37 C.F.R. § 1.132

1. I, Randall E. Tagawa, duly sworn and under oath, declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true.
2. I am an inventor for the above-captioned patent application. I am also CEO of Tagawa Greenhouse Enterprises, LLC, the owner of the above-captioned patent application, and have been in the greenhouse and nursery business for 24 years.
3. By virtue of the foregoing, I have knowledge and skill that is at least representative of those ordinarily skilled in the art pertaining to the disciplines set forth above.
4. I have reviewed the instant patent application, the claims as amended in response to the office action of April 14, 2010, the office action of April 14, 2010, and the Bouldin reference (US Pat. No. 5,911,631).
5. Based on my knowledge and skill as described above, I am able to make the following statements.
6. Before the technology described by claim 1 as amended in response to the office action of April 14, 2010, existing methods of using customized punch pin head shapes to reduce plant damage during a punch were far from perfect. Damage to plants, while reduced as compared with punching methods before customized pin head shapes (which arrived in approximately 1974), still occurred and compromised yields. The mechanical arts were in possession of the ability to impart a horizontal component of motion to the plant punch head while descending to punch a plant for at least 50 years. However, it

took until late 2003 for the invention to be conceived. The shifter plant punch machines have satisfied this long-felt need for an elimination (or near elimination) of plant damage during a plant punch. There has also been a long-felt but unmet need for each of the following: labor cost savings during punching; improved finish plant quality (after punching); faster transplanting; better plant growout (after transplanting); ability to punch a greater range of plug plant crops; enhanced compatability with existing plant punch systems; ability to punch plants whose high height makes them "unpunchable"; and greater ease of use of compared with conventional punching methods that seek to mitigate plant punch damage. The attached letters document the advantages of Tagawa's "shifter" punching system. More particularly they testify to the reduced damage and improved yields causally attributed to the shifting aspect of the inventive apparatus relative to prior art downward punching systems. The shifting plant punch apparatus also has an improved ability to punch plants whose high height makes them "unpunchable." The advantages in the attached letters are afforded by apparatus described by amended claim 1.

7. While there was an appreciation that there were unacceptably high rates of damage during a downward plant punch using conventional methods, there was no appreciation that the problem was the purely vertical motion of the plant punch pin while moving downward to initiate a punch. This is clear from the fact that all the attempts to mitigate damage during a downward punch focused on the shape of the head of the plant punch pin, and/or the point at which the purely vertically descending punch pin head first struck the soil (off-center punching). Neither "solution" sought to change the travel path of the descending plant punch pin from its purely vertical direction.

8. Attempts by the industry to adequately reduce plant punch damage caused during a downward plant punch have been significant - indeed, the industry has developed several different customized plant punch pin heads in order to alleviate the problem of plant punch damage during punching. The problem had persisted so long (at least since the beginning of plant punching), and the methods developed to resolve the problem were so inadequate, that to a large extent, before the invention was conceived, the industry simply started to presume an unavoidable loss of 20% for certain plant varieties, and, for those varieties, a plant finishing time compromised by 5-7 days (resulting in compromised turns, and compromised profits). The shifter apparatus has eliminated this increase in plant finishing time.

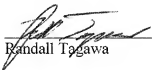
9. The shifter plant punch machine has been well received in the marketplace (see the attached letters from Ball Seed representatives).

10. When conventional punching machines (which punched straight up and down) were first introduced, the industry was amazed that they worked, and rather incredulous that they did. Any additional innovation that enhance the capabilities of punching machines, such as the shifting ability of the shifting punching machines, is met with similar incredulity.

11. The Bouldin reference, while relating to transplanting, does not disclose downward punching as now claimed. Pins in Bouldin first dislodge plants from their germination tray using an upward motion. Further, claim 1 now also makes clear that the "plant punch element relative movement mechanism relatively moves said first plant punch element through said first spatial point and then said second spatial point before said plant punch event". However, any horizontal motion disclosed by the Bouldin reference occurs *after* its plants are dislodged from their germination tray (which again, requires an upwards motion in Bouldin) and, further, is not of the component in Bouldin that effects such dislodging of the plant from its "first" tray. One preferred embodiment of our apparatus is described by claim 11, as amended, which says that the "first plant punch element relative travel path passes below said plant emergent point horizontal plane at least by that amount necessary to transplant said first plant into a container established below said plant emergent point horizontal plane." Bouldin's secondary tray is not under the tray from which the plant is first removed (of course, that would make no sense, as Bouldin dislodges using an upwards motion). Further, in order for Bouldin to transfer the dislodged plant into a new container (i.e., from the germination tray to the secondary tray), it must go through a much more complicated movement, one involving grippers that must be spread (see Fig. 9 of Bouldin as compared to its Fig. 8), and, also, manipulation of gripper fingers during plant grasping from the germination tray insertion into the secondary tray. Bouldin is a much more complicated apparatus as compared with the punching apparatus disclosed in claim 1.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the application or any patent issued thereon.

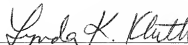
Dated the 14th day of September, 2010.


Randall Tagawa

UNITED STATES OF AMERICA)
STATE OF COLORADO)ss.
COUNTY OF ~~DENVER~~ *Broomfield*

SUBSCRIBED AND SWORN to before me in the County of *Broomfield*, State of Colorado, United States of America, by Randall Tagawa, this 14th day of September, 2010.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.


Notary Public
My Commission Expires: *7/1/14*

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Exhibit B

Letters Referenced in Affidavit

July 8, 2010

Dear John,

I am sending this letter to express both my and my customers' appreciation of the Punchables plug system. I have personally sold and installed the shifter for many years now. Many of my greenhouse customers are using the shifting mechanism on the Punchables machine. This has allowed them to punch a greater range of plug crops and work more efficiently. The shifter will transplant taller plug crops with little to no damage. Less damage and more plugs in the finish tray means faster transplanting and more success in plant grow out. The growers are thrilled with the labor cost savings and finish plant quality.

The shifter is easy to use and is a great compliment to a wonderful transplanting system. Keep up the good work!

Sincerely,

Derek Schrof
Ball Seed Co. Sales



Ball Horticultural Company
622 Town Road
West Chicago, IL 60185-2698
USA
ballhort.com

630 231-3600
Fax: 630 231-3605

September 1, 2010

Bill Kluth
Tagawa Greenhouses
17999 Weld County Road #4
Brighton, CO 80603

Dear Bill,

As the leading distributor of bedding plant plugs in North America, Ball Horticultural Company relies on the Punch N Gro transplanting system to maintain our dominant market share. The shifter component of the system is a critical addition to Ball's bedding plant plug business and allows us to remain significantly differentiated in an otherwise mature market.

The shifter mechanism on the Punch N Gro transplanter has allowed us to present a total transplanting solution to our grower customers. Without it we would be able to confidently offer them a transplanter only for "tough" annuals such as pansies and petunias. That is because without the shifter, damage can be caused to the "soft" classes such as marigold and tomato. We have found with the shifter in action, we avoid the stem and leaf breakage that occurs with the pin coming straight down. By approaching the plant from the side instead of straight down we can transplant most all bedding plant classes and offer a complete transplanting solution. The shifter also gives us the ability to punch plants that are larger than our product specifications minimizing extra labor cost when transplanting is delayed.

It is a great system, thanks for partnering with us on the program.

Sincerely,

Mark Snyder

Director-North America Supply Chain

Ball Seed Company